

SUBCHAPTER M: SAFETY
§§217.321 - 217.333
Effective August 28, 2008

§217.321. Safety Design.

(a) The safety aspects of a treatment facility design must be based on *Design of Municipal Treatment Plants*, WEF Manual of Practice No. 8, published by the Water Environment Federation, or other safety design guidelines approved by the executive director.

(b) Occupational safety and health hazards and risks to workers and the public must be addressed in the design of collection system and treatment facility equipment and processes.

(c) A facility design must incorporate processes that use the least hazardous and toxic chemicals and the least amounts of those chemicals that will effectively treat and disinfect the influent so that the effluent and the sludge meet the requirements in the associated wastewater permit and do not degrade the water quality in a receiving stream or cause accumulation in a land application area.

(d) Where applicable, a design must follow the guidelines established under 29 Code of Federal Regulations, Part 1910.

(e) A design must demonstrate compliance with this section by implementing §217.322 of this title (relating to Safety and Security Audits) and §217.323 of this title (relating to Hazardous Operation and Maintenance).

Adopted August 6, 2008

Effective August 28, 2008

§217.322. Safety and Security Audits.

(a) Safety Audit.

(1) The owner of an existing facility being materially altered or expanded must conduct a safety audit of the facility that evaluates injuries and incidents at the facility during the prior three-year period in order to determine the locations, causes, types of injuries, and jobs being performed when the injuries or incidents occurred.

(2) A safety audit must identify the locations and jobs associated with injuries or incidents and any subsequent corrective action taken or planned.

(3) A design must include measures that address the needed corrective actions identified in the safety audit as part of a material alteration or expansion project.

(b) Security Audit.

(1) The owner of an existing facility may conduct a security audit.

(2) The security audit may be based on the *Asset Based Vulnerability Checklist for Wastewater Utilities* by the Association of Metropolitan Sewerage Agencies or an equivalent security audit protocol.

Adopted August 6, 2008

Effective August 28, 2008

§217.323. Hazardous Operation and Maintenance.

(a) An owner shall perform an analysis of operational and maintenance tasks to identify potentially hazardous situations for a new, expanded, or materially altered facility.

(b) For those identified potentially hazardous tasks, a list must be prepared for each task that identifies the necessary:

- (1) tools, equipment, and supplies;
- (2) fixed and portable lifting equipment;
- (3) fixed and portable monitoring equipment;
- (4) personal protective equipment and clothing;
- (5) warning signs and guards; and
- (6) first-aid supplies.

(c) The tools at a facility must be sufficient to:

- (1) allow workers to safely and properly operate equipment;
- (2) perform required preventive maintenance, in compliance with the manufacturers' minimum requirements;
- (3) make repairs; and
- (4) maintain processes, pumps, motors, blowers, compressors, laboratory, instrumentation, and other equipment.

Adopted August 6, 2008

Effective August 28, 2008

§217.324. Chemical Handling.

(a) An owner must make available appropriate protective equipment for breathing, eyes, face, head, and extremities for operating staff who will handle any chemical known to pose a potential health risk and must train the facility staff in the use of the equipment.

(b) A facility that uses any chemical must be designed to provide eye washing and showering systems in all appropriate locations.

(c) All protective equipment and chemical neutralizers must be stored near but outside a chemical storage area.

Adopted August 6, 2008

Effective August 28, 2008

§217.325. Railings, Ladders, Walkways, and Stairways.

(a) An opening in a railing must have a removable chain.

(b) A open valve box, pit, tank, or basin that extends less than 4.0 feet above ground must have a railing capable of preventing a person from falling into it.

(c) A steep or vertical ladder is acceptable only for infrequent access to equipment.

(d) A ladder must have flat safety tread rungs and extensions at least 1.0 foot out of a vault.

(e) A walkway above an open tank must have a raised edge designed to prevent a person from slipping off the walkway.

(f) Walkways, steps, landings, and ladder rungs must have a non-slip finish.

(g) An overhead pipe must have at least a 7.0-foot clearance, unless the pipe is padded to prevent head injury and has a warning sign.

Adopted August 6, 2008

Effective August 28, 2008

§217.326. Electrical and Fire Code Compliance.

(a) The electrical elements of a facility or system design must conform to local electrical codes or to the National Fire Protection Association (NFPA) 70 – National Electrical Code if the facility is located in an area that does not have a local electrical code.

(b) The facility or system design must conform to local fire codes or to the National Fire Protection Association (NFPA) 70 if the facility is located in an area that does not have a local fire code.

Adopted August 6, 2008

Effective August 28, 2008

§217.327. Non-Potable Water.

Each hydrant and outlet for non-potable water must be clearly marked as "**NON-POTABLE WATER**" or "**UNSAFE WATER.**"

Adopted August 6, 2008

Effective August 28, 2008

§217.328. Facility Access Control.

- (a) A facility must be completely fenced and have a lockable gate at each access point.
- (b) A facility containing an open tank must have hazard signs stating "**DANGER - OPEN TANKS - NO TRESPASSING**" within visible sighting of each other and on each gate .
- (c) A facility containing an open tank must be surrounded by an intruder resistant fence that is :
 - (1) at least an 8.0 foot solid material or chain-link fence topped with at least one strand of barbed-wire;
 - (2) at least a 6.0 foot high solid material or chain-link fence topped with three strands of barbed-wire ; or
 - (3) a five -strand barbed-wire fence may be used in a rural area for fencing lagoons or overland-flow plots, in lieu of chain-link or board fencing required by paragraphs (1) and (2) of this subsection.
- (d) A facility must have at least one all-weather access road with the driving surface situated above the 100-year flood plain.

Adopted August 6, 2008

Effective August 28, 2008

§217.329. Color Coding of Pipes.

- (a) A new facility must have color-coded pipes.
- (b) A new facility must have tracer tape for each non-metallic underground pipe.
- (c) An existing facility must color-code and install tracer tape for each pipe associated with a material alteration or expansion .
- (d) A non-potable water pipe must be painted purple and be stenciled "**NON-POTABLE WATER**" or "**UNSAFE WATER.**"
- (e) A facility design must use the following color-coding for pipes:
 - (1) Sludge - brown;
 - (2) Natural gas - red;
 - (3) Potable water - light blue;
 - (4) Chlorine - yellow;
 - (5) Sulfur Dioxide - lime green with yellow bands;

- (6) Sewage - grey;
- (7) Compressed air - light green;
- (8) Heated water - blue with 6 inch red bands spaced 30 inches apart;
- (9) Power conduit - in compliance with the National Electric Code;
- (10) Reclaimed water - purple;
- (11) Instrument air - light green with dark green bands;
- (12) Liquid alum - yellow with orange bands;
- (13) Alum (solution) - yellow with green bands;
- (14) Ferric chloride - brown with red bands;
- (15) Ferric sulfate - brown with yellow bands;
- (16) Polymers - white with green bands;
- (17) Ozone - stainless steel with white bands;
- (18) Raw water – tan; and
- (19) Effluent after clarification – dark green.

Adopted August 6, 2008

Effective August 28, 2008

§217.330. Public Drinking Water Supply Connections.

(a) Connection between a public drinking water supply system and a wastewater treatment facility must be made through an air gap or a reduced-pressure principle backflow prevention assembly (RPBA) in accordance with American Water Works Association (AWWA) Standard C511-97 or AWWA Manual M14.

(b) Each RPBA must be tested annually.

(c) RPBA test results and maintenance records must be retained onsite for at least three years.

Adopted August 6, 2008

Effective August 28, 2008

§217.331. Freeze Protection.

A horizontal surface subject to freezing temperatures and water accumulation must be sloped to prevent ice formation.

Adopted August 6, 2008

Effective August 28, 2008

§217.332. Noise Levels.

(a) An area accessed by staff must be designed to comply with 29 Code of Federal Regulations §1910.95.

(b) Removable noise attenuation is prohibited.

Adopted August 6, 2008

Effective August 28, 2008

§217.333. Confined Spaces.

(a) A design must, to the extent practicable, avoid confined spaces as defined in 29 Federal Code of Regulations §1910.146.

(b) A ventilating manhole must be equipped with a connection for a portable ventilator.

(c) A confined space entry must be conducted according to the requirements of 29 Code of Federal Regulations §1910.146.

Adopted August 6, 2008

Effective August 28, 2008